ATTACHMENT C
ADDITIONAL INFORMATION REQUIREMENTS
FOR REPORT OF WASTE DISCHARGE
MISCELLANEOUS ORGANIC WASTE APPLICATION SITES
June 2007

Please provide a technical report prepared by a California registered Civil Engineer that presents the following information:

1. A site index or key map at a scale of at least 1:24,000 (*e.g.*, USGS 7.5" topographic map) showing the following:
   a. Site topography;
   b. Public and private roads;
   c. Major drainages and surface waters;
   d. Wells on or within 500 feet of the site boundary (specify well type and construction details, if available);
   e. Residences on or within 500 feet of the site boundary;
   f. Site access roads;
   g. All vernal pools and wetlands;
   h. Storm water detention/retention basins;
   i. Waste staging and storage areas; and
   j. The boundaries of each application field.

2. A Flood Insurance Rate Map (FIRM) or other floodplain map prepared by a public agency showing the site boundaries, surface waters, roads, and the 100-year floodplain.

3. Application field maps of at least 1:1200 (1" = 100') showing the boundaries of each application field, typical drainage patterns, all minor drainages (including manmade drainage systems), tailwater/runoff detention ponds, run-on/runoff control structures, and setback and buffer zones for each application field. One or more adjacent fields may be depicted on each application field map.

4. For each storm water detention/retention basin, provide the following information:
   a. Method of construction (*e.g.*, cut/fill balance, excavated, above-grade);
   b. Total runoff catchment area (fields identification and total acreage);
   c. Surface area, depth, and volumetric capacity at two feet of freeboard;
   d. Design precipitation event criteria and runoff calculations showing that the capacity is sufficient to contain runoff from the design event with two feet of freeboard.

5. The name, mailing address, phone number, and primary contact name for each hauler that will transports waste to the site(s).

6. A description of the means and methods of waste application, staging, and short-term storage.

7. Typical crops grown and planting/harvesting cycles.

8. Typical rooting depth for each type of crop.

9. Crop nitrogen requirements (tons per acre per year).

10. Proposed application period (*e.g.*, dry weather only or year round).

11. Typical waste application rate (wet and dry tons per acre per application and wet and dry tons per year).

12. Typical waste application cycle time (weeks or months).

13. Typical nitrogen application rate (tons per acre per year) considering all sources (*e.g.*, waste, supplemental fertilizers, other organic matter, livestock waste, *etc*.).

14. Methods of public access control.

15. A description of all runoff controls and typical maintenance procedures.

16. A description of storm water management practices (*e.g.,* retention period after last waste application, criteria for determining whether storm water may be allowed to run off to surface waters).

17. The following information each application field:
    a. Field identification
    b. Acreage (total and net application area with setbacks and buffers)
    c. Number and type of wells present, and any available construction information Average and maximum slopes
    d. Surface soil types and depths
    e. Method of irrigation
    f. Typical irrigation cycle and water application depth (days/weeks and inches, respectively)
    g. Historical annual and cumulative loading rates for arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc since inception of waste application at the field.
    h. Typical anticipated annual loading rates for arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc.
    i. Historical and current cation exchange capacity. Discuss any changes since the inception of waste application.
    j. Historical and current soil pH and description of previous lime applications and other steps to control soil pH.
    k. Based on historic and anticipated future metals loading rates, projected years of waste application before the any cumulative load ceiling or limiting soil concentration is reached.

18. Anticipated annual time schedule for field operations including anticipated waste application windows, seeding operations, supplemental fertilization, irrigation, and cultivation/harvest.

19. A *pH Control Plan* that describes a program to regularly monitor soil pH, particularly in those fields where pH tends to be acidic, and implement pH control as needed to consistently maintain the soil pH within an acceptable range. Include sample calculations with supporting documentation to show how lime (or other chemical dosing) rates will be determined.
    a. Typical soil pH, including any variability associated with waste application cycles.

20. An *Erosion Control Plan* that explains in detail the justification for using each field where slopes are 10 percent or greater and special application and management practices to be used to assure containment of the waste within the application area.

21. A *Spill Response and Traffic Plan* that includes at least:
    a. Typical routes to access the site for waste transport vehicles
    b. Emergency contacts and notification procedures
    c. A discussion of personal protective equipment required to response to spills
    d. Response instructions for spill during waste transport

22. An adverse *Weather and Alternative Plan* that details procedures to be used when waste cannot be applied due to adverse conditions (wind, precipitation, field preparation delays, access road limitations, *etc*.).

23. A supplemental technical report prepared by a Registered Geologist or Certified Hydrogeologist that provides an assessment of the following:
    a. Groundwater degradation, if any, that has resulted from the existing operation; and
    b. The potential for the continued discharge to degrade groundwater quality
    c. This assessment must be made based on site-specific data and must provide technically-based answers to the following questions based on historical data and supplemental data to be collected for the purpose of this study:
    d. What are subsurface conditions at the site? [1]
    e. What is the groundwater elevation and gradient at site?
    f. What is background shallow groundwater quality for typical municipal waste constituents? Compare to established water quality objectives. [2]

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[1] This must be based on subsurface investigation at the proposed disposal site including soil borings and/or cone penetrometer tests and groundwater analyses. If desired, groundwater samples may be obtained using a one-time sampling method such as Hydropunch®.

[2] Include analyses for the following: total coliform organisms, total dissolved solids, ammonia (as N), total Kjeldahl nitrogen, nitrate (as N), nitrite (as N), and a complete anion/cation scan with ion balance (including metals monitored pursuant to 40 CFR 503). Total coliform organisms shall be determined using the 15- or 25- tube method.

g. For each monitored constituent, has the existing facility degraded groundwater quality? If so:
   - What constituents exceed the applicable water quality objective?
   - What constituents exceed background concentrations?
   - Based on site hydrogeology, is the degradation contained within a defined area (or one that could be defined by additional investigation)?

h. Based on site hydrogeology, the nature of the waste, and the proposed disposal method, what level of degradation is expected to result from continued land application of waste (if any)?

At a minimum, the report shall include the following:

- Rationale for field investigation approach.
- Description and documentation of all investigational methods and activities.
- Description of the site hydrogeology including stratigraphy, groundwater elevation and gradient, transmissivity, and influence of all recharge and pumping sources (*i.e*., a site conceptual model).
- Description of fate and transport mechanisms for all monitored constituents.
- Description of data reduction/analysis techniques and results.
- Presentation of historical and supplemental site-specific soil and groundwater data.
- Comparison of groundwater quality data to background groundwater quality and water quality objectives for each constituent.
- An analysis of all data and conclusions regarding each of the above questions.